**WHAT IS CLAIMED IS:**

1. A processing apparatus that provides a plasma treatment to an object, said processing apparatus comprising:

a process chamber that accommodates an object to be processed, and generates plasma;

a gas introducing part for introducing gas into the process chamber; and

a mechanism that arranges the object at an upper side in a flow of the gas than an plasma generating region.

2. A processing apparatus according to claim 1, further comprising, between the object and the plasma generating region, a conductance adjuster for maintaining, within a predetermined range, a concentration of active species in a process space that encloses the object.

3. A processing apparatus according to claim 2, wherein said conductance adjuster is a plate bored with plural holes.

4. A processing apparatus according to claim 2, further comprising an exhaust mechanism at a side of the plasma generating region in that is partitioned by

said conductance adjuster, wherein said gas introducing part is located at a side of the object in said process chamber that is partitioned by said conductance adjuster.

5. A processing apparatus according to claim 2, wherein said gas introducing part includes a first gas inlet for introducing into said process chamber process gas for the plasma treatment to the object, and a second gas inlet for introducing inert gas into said process chamber, and

wherein said processing apparatus further comprises an exhaust mechanism at a side of the plasma generating region in said process chamber that is partitioned by said conductance adjuster, and

wherein the first gas inlet is located at the side of the plasma generating region in said process chamber that is partitioned by said conductance adjuster, and the second gas inlet is located at a side of the object side in said process chamber that is partitioned divided by said conductance adjuster.

6. A processing apparatus according to claim 1, wherein the plasma treatment is oxidation or nitridation to a surface of the object.

7. A processing apparatus that provides a plasma treatment to an object, said processing apparatus comprising:

a process chamber that accommodates an object to be processed, and generates plasma;

a gas introducing part for introducing gas into the process chamber; and

an exhaust mechanism arranged closer to a plasma generating region than the object.

8. A processing apparatus according to claim 7, further comprising, between the object and the plasma generating region, a conductance adjuster for maintaining, within a predetermined range, a concentration of active species in a process space that encloses the object.

9. A processing apparatus according to claim 8, wherein said conductance adjuster is a plate bored with plural holes.

10. A processing apparatus according to claim 8, wherein said exhaust mechanism is located at a side of the plasma generating region in said process chamber that is partitioned by said conductance adjuster, wherein said gas introducing part is located at a side

of the object side in said process chamber that is partitioned by said conductance adjuster.

11. A processing apparatus according to claim 8, wherein said gas introducing part includes a first gas inlet for introducing into said process chamber process gas for the plasma treatment to the object, and a second gas inlet for introducing inert gas into said process chamber, and

wherein said exhaust mechanism and the first gas inlet are located at a side of the plasma generating region in said process chamber that is partitioned by said conductance adjuster, and

wherein the second gas inlet is located at a side of the object side of said process chamber that is partitioned by said conductance adjuster.

12. A processing apparatus according to claim 7, wherein the plasma treatment is oxidation or nitridation to a surface of the object.

13. A processing apparatus that provides a plasma treatment to an object, said processing apparatus comprising:

a process chamber that accommodates an object to be processed, and generates plasma;

a gas introducing part for introducing gas

into the process chamber; and

a mechanism for maintaining a concentration of active species from $10^9$ to $10^{11}$ $cm^{-3}$.

14. A processing apparatus according to claim 13, wherein said maintaining means includes, between the object and the plasma generating region, a conductance adjuster for maintaining, within a predetermined range, a concentration of active species in a process space that encloses the object.

15. A processing apparatus according to claim 14, wherein said conductance adjuster is a plate bored with plural holes.

16. A processing apparatus according to claim 14, further comprising an exhaust mechanism at a side of the plasma generating region in said process chamber that is partitioned by said conductance adjuster, wherein said gas introducing part is located at a side of the object side in said process chamber that is partitioned by said conductance adjuster.

17. A processing apparatus according to claim 14, wherein said gas introducing part includes a first gas inlet for introducing into said process chamber process gas for the plasma treatment to the object, and a

second gas inlet for introducing inert gas into said process chamber, and

wherein said processing apparatus further comprises an exhaust mechanism at a side of the plasma generating region of said process chamber that is partitioned by said conductance adjuster, and

wherein the first gas inlet is located at the side of the plasma generating region in said process chamber that is partitioned by said conductance adjuster, and the second gas inlet is located at a side of the object side of said process chamber that is partitioned by said conductance adjuster.

18. A processing apparatus according to claim 13, wherein the plasma treatment is oxidation or nitridation to a surface of the object.

19. A processing method that accommodates an object in a process chamber and introduces gas containing oxygen into the process chamber to provide a plasma treatment to the object so as to form an oxide film having a thickness of 8 nm or smaller, said processing method comprising the steps of:

maintaining a concentration of active species on the object from $10^9$ to $10^{11}$; and

conducting the plasma treatment for a process time longer than 5 seconds.